

WHAT IS CLAIMED IS:

- 1 1. A computer-implemented method for persisting object-oriented data objects,
2 comprising:
3 defining in a source program a first structure type for storage of one or more data
4 values;
5 defining in the source program a plurality of objects of the structure type;
6 initializing the objects with selected data values in the source program;
7 defining in the source program a first class that derives from the structure type,
8 the class including a static method configured to convert an object of the structure type to
9 an instance of the class in response to a reference to the method; and
10 allocating memory for the objects and assigning the data values to the objects at
11 compile-time.
- 1 2. The method of claim 1, further comprising:
2 defining in the source program one or more traits classes, each traits class
3 including first, second, and third public type definitions, the first type definition
4 identifying a class described by the traits class, the second type definition identifying a
5 base structure for the class described by the traits class, and the third type definition for
6 identification of a structure for input to the static method of the class described by the
7 traits class, for reference to the class described by the traits class, and for assignment of
8 data to the class described by the traits class; and
9 defining in the source program a second class, the second class including an
10 attribute of the third type definition of a traits class that describes the first class.
- 1 3. The method of claim 2, further comprising:
2 defining in the source program a collection class that includes objects of the first
3 class; and
4 instantiating objects of the first class in an object of the collection class in the
5 source program.

1 4. The method of claim 3, further comprising defining in the source program a
2 collection iterator configured to traverse the objects of the first class in the collection
3 object.

1 5. The method of claim 4, further comprising:
2 defining in the source program a second structure type that includes one or more
3 void pointers and an input aggregate structure; and
4 defining one or more of the traits classes with the second structure type used as
5 the third public type definition.

1 6. The method of claim 5, further comprising:
2 defining a template class that includes an initialize method that calls a language-
3 provided function that constructs an object of a specified type;
4 defining in one of the traits classes a member attribute that is a pointer to the
5 initialize method.

1 7. The method of claim 4, further comprising:
2 defining in the source program a pre-processor macro that encapsulates the
3 collection class; and
4 instantiating objects of the first class in an object of the collection class in the
5 source program by reference to the pre-processor macro.

1 8. The method of claim 7, further comprising defining in the source program a pre-
2 processor macro that forward references the collection class.

1 9. The method of claim 7, further comprising defining in the source program a pre-
2 processor macro that references an element of a first collection in an entry of a second
3 collection.

1 10. The method of claim 7, further comprising defining in the source program a pre-
2 processor macro that initializes a collection having no entries.

1 11. The method of claim 7, further comprising:
2 defining in the source program a second structure type that includes one or more
3 void pointers and an input aggregate structure; and
4 defining one or more of the traits classes with the second structure type used as
5 the third public type definition.

1 12. The method of claim 11, further comprising:
2 defining a template class that includes an initialize method that calls a language-
3 provided function that constructs an object of a specified type;
4 defining in one of the traits classes a member attribute that is a pointer to the
5 initialize method.

1 13. The method of claim 4, further comprising defining an initializer class that
2 iterates through objects in the collection class invoking a default constructor for an input
3 class type.

1 14. The method of claim 2, further comprising:
2 defining in the source program a second structure type that includes one or more
3 void pointers and an input aggregate structure; and
4 defining one or more of the traits classes with the second structure type used as
5 the third public type definition.

1 15. The method of claim 10, further comprising:
2 defining a template class that includes an initialize method that calls a language-
3 provided function that constructs an object of a specified type;
4 defining in one of the traits classes a member attribute that is a pointer to the
5 initialize method.

- 1 16. An apparatus for persisting object-oriented data objects, comprising:
2 means for defining in a source program a first structure type for storage of one or
3 more data values;
4 means for defining in the source program a plurality of objects of the structure
5 type;
6 means for initializing the objects with selected data values in the source program;
7 means for defining in the source program a first class that derives from the
8 structure type, the class including a static method configured to convert an object of the
9 structure type to an instance of the class in response to a reference to the method; and
10 means for allocating memory for the objects and assigning the data values to the
11 objects at compile-time.

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